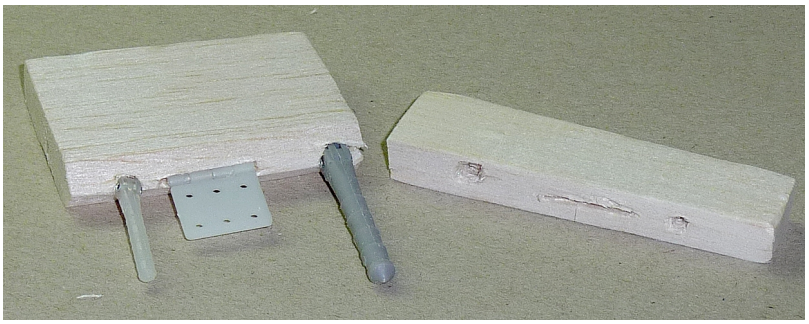
Top tip: Gluing hinges

Haven't we all glued up the hinge joint when gluing hinges into trailing edges and control surfaces? There's nothing for it but to pry out the hinge and try again, usually spoiling our beautifully shaped edges. When hinges have ridges in them I have tended to use PVA rather than CA, epoxy or Super 'Phatic. It tends not permanently to gum up the joints. After a momentary 'crack' the joint is usually free … ish.

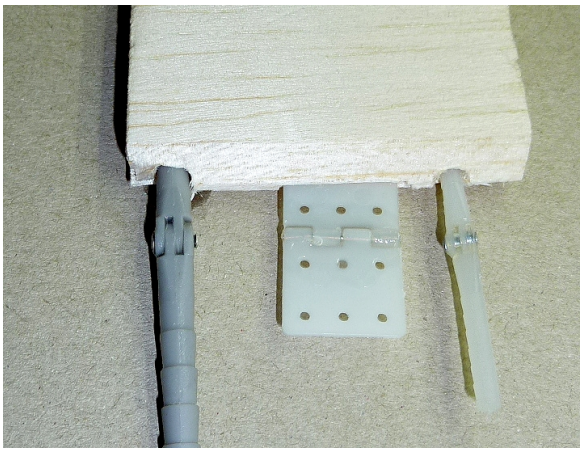
In RC Soaring Digest (https://www.rcsoaringdigest.com/) I read an interesting tip. The idea is to put a tiny spot of oil on the hinge joint before gluing. This repels the glue. I thought I'd try it. However I didn't want to use ordinary runny oil because it might stain the wood, and we electric flyers don't like that. I thought I'd try the dry PTFE lubricant that I use for my bike chains. It goes on as a liquid but dries to a solid and of course is Teflon.

I cut holes and slots into a couple of pieces of scrap balsa to fit a flat hinge and two round ones – the largest Robart and a small non-branded one. Here you see the arrangement.



This is like a close fitting aileron with a V-shaped front edge and a square wing trailing edge. This is probably the most tricky one to do successfully. To make life as difficult as possible for myself I decided to use two-part epoxy.

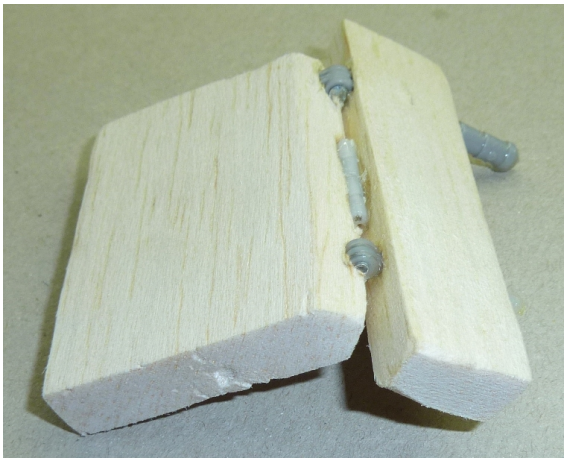
This is the lubricant bought from a local bike shop. Using a narrow artist's paintbrush I put it on both sides of the hinge and worked the hinge to force it to penetrate. I wiped the surplus off with a paper towel, and left it to dry for a few hours. The other picture shows the lubricant applied to the hinges after drying. I sanded the hinges with sandpaper and finally wiped with meths.



I used the usual, but not excessive, care applying the glue. Using a toothpick I poked some into the holes and slots and put a little on one side of the flat hinge and the bodies of the round ones. I wiped the wood surface with meths before inserting the hinges. I did the V-shaped side of the joint first and allowed the 15 minute glue to cure for an hour. There

was bit of a click as I moved the hinges for the first time but the pivot parts of the hinges still moved freely. So far so good.

I then glued the other balsa part as described above and pushed the two parts together very closely. I wiped off the small surpluses and again left it for an hour.



Next day it all worked very smoothly. Let's hope I can be as successful gluing the hinges on the tail surfaces of my new Goldwing Slick 3D.

I think next time I will play even safer by using a cotton bud soaked in meths to clean out the recesses before inserting the hinges. Also I will not put any epoxy on the hinges, only in the holes.

When fitting the elevator and rudder to the Goldwing Slick I improved the method further. I decided that it's a good idea to cut V-shaped recesses around the hinge slots. I used the oil treatment again. Instead of epoxy I glued the hinges by dripping de Luxe Materials Super 'Phatic into the slots and worked it in with a toothpick. I did this three times. Then I cleaned the slot recesses with cotton buds soaked with meths, not water, before inserting the hinges. I did not put glue on to the hinges to avoid it being squeezed out into the recesses. 'Phatic takes 15 or 20 minutes to set. The surfaces flop easily under gravity. This method works faultlessly and I will always use it from now on.

Peter Scott © 2019
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